

Georg Kell  
Executive Head Global Compact  
United Nations Global Compact Office  
United Nations  
New York NY 10017, USA

Rotterdam, 22 December 2010

Subject: Saybolt's support and Communication on Progress

Dear Sir,

In this year, marking the 10th anniversary of the UN Global Compact, I again pledge Saybolt's support for the United Nations Global Compact and also prolong our support to her 10 Principles. The UN Global Compact came a long way and we can now recognise that bringing together companies and stakeholders proved a productive way to address crucial issues like the Millennium Goals.

In 2002 Saybolt International was among the first in the Netherlands to commit themselves to the principles set out at that time. Eight years later the number of organisations expressing support to the UN Global Compact in the Netherlands has more than ten folded. Also globally the number of members is still increasing and local networks are developing. Saybolt welcomes this, as more and more actors in the public and private sector are taking up their responsibility in the field of the ten UN Global Compact Principles.

Additionally, this letter is accompanied by the Communication on Progress, giving insight in how Saybolt International is supporting the UN Global Compact Principles. Special attention this year will be given to Saybolt's efforts to support the battle against Child Labour, the fifth principle. This is in line with the roadmap for achieving the elimination of the Worst Forms of Child Labour by 2016, as recently adopted in The Hague.

Sincerely yours,



Jan Heinsbroek

President



## United Nations Global Compact



### Saybolt International Communication on Progress (CoP)

This Communication on Progress contains an overview of the activities that were undertaken by Saybolt International throughout its world-wide network in the period 2002-2010, covering the whole period as member of the UN Global Compact. Contrary to previous CoP's this year the reporting will be done per theme (Labour, Environment, Human Rights and Anti-Bribery) instead of division per year.

#### **1. Saybolt International: a brief introduction**

Saybolt, founded in 1897, is one of the leading companies in the field of independent inspection, verification, monitoring and analytical services. In its 215 offices and 104 laboratories it employs approximately 3,000 staff located in over 85 country offices around the world.

Saybolt operates on a global scale in the oil & gas, as well as in the petro-chemical, chemical and agricultural industry. On these crossroads, Saybolt furthermore developed a specialism in biofuels and is one of the first to commercially have worked on jatropha projects. Saybolt provides services to private sector clients, as well as governments and international organisations, mainly in the field of humanitarian aid inspection.

Saybolt International joined the UN Global Compact in 2002 and was a launching member of the Netherlands Chapter of the UN Global Compact in May 2007. Saybolt is part of the Core Laboratories group of companies (Corelab). The Corelab shares are traded on the New York Stock Exchange (symbol "CLB").

## 2. Saybolt Communication

### Internal Communication

Saybolt channels its internal communication through newsletters and meetings. In the bimonthly newsletter there is a column devoted to various issues. Amongst these is the UN Global Compact, its principles and the processes involved. In the most recent period, 2009-2010, columns in the organisation wide distributed Saybolt Newsletter were dedicated to issues directly dealing with the UN Global Compact, or indirectly, such as biofuels issues (non-commercial).

- In March 2009 there was a report on the development on second generation biofuels and more specifically biomass-energy from wood;
- In October 2009 the Saybolt Newsletter featured a special report on the way Saybolt is reporting, also to the Un Global Compact;
- In May 2010 a column was dedicated to the developments in the field of electric cars and also a report on biofuels initiatives;
- In the July 2010 issue the column was dedicated to the creation of awareness on the existence of child labour, the effects and how to combat it;
- In that same issue there was a report on the science based approach to solution building by environmentalist Michael Moore;
- In November of 2010 an article was devoted to developments in the field of Biomass.

During Area- and Country Management Meeting, there is often opportunity to communicate the intention and nature of any upcoming project in the field of UN Global Compact issues. Also within the scope of subjects discussed and more in general, there is always time to discuss issues that are reflecting our scope of direct responsibility, such as safety issues, combatting bribery and other compliance issues.

As part of a large scale internal communication effort, Saybolt recently introduced a sharepoint-environment whereby Saybolt employees can access various information from the Saybolt organisation. The internal wiki-pages are also part of this. A special section is dedicated to the UN Global Compact and our previous themes. This is an ever changing and 'live' tool. In this past year additional information on various issues have been added.

## External Communication

Saybolt is a business-to-business company whose prime asset is its independency and impartiality. We do not have external communication targeted towards consumers. In our communication towards our clients we stress our policies towards the various principles embodied by the UN Global Compact.

Also, on our corporate website there is a dedicated page on the UN Global Compact Principles and the way this reflects our various policies. This is also the location where one can be directed through a link to the ten UN Global Compact principles and where our Communication on Progress (CoP) can be obtained.

Saybolt does not publish an individual annual report. The reporting is consolidated through the annual report of the mother company, Core Laboratories. We will inform our stakeholders of our efforts and results via pages on the website, dedicated to the UN Global Compact. We have our Saybolt international newsletters available to any visitor our one of our locations. In these newsletters issues related to the ten principles are frequently addressed.

### 3. Themes and Practical Action

Yearly, Saybolt will appoint one of the UN Global Compacts ten principles to be given special attention to in the coming year. As Saybolt is a specialist organisation, with limited room to influence outcomes in certain area's most of the principles are not suitable for Saybolt to influence our environment thereon.

When a theme is chosen, internal communication will create awareness among our employees and hopefully also their personal and professional environment. When and if possible the actions chosen should also produce measurable results.

#### Human rights

- *Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and*
- *Principle 2: Business should make sure that they are not complicit in human rights abuses.*

Saybolt has strict policy on human rights. Saybolt has recently not undertaken specific action on these subjects. At the same time the Saybolt Netherlands management decided in 2009 to provide only fair trade products in the traditional Christmas box.

## Labour

- *Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;*
- *Principle 4: the elimination of all forms of forced and compulsory labour;*
- *Principle 5: the effective abolition of child labour; and*
- *Principle 6: the elimination of discrimination in respect of employment and occupation.*

### Fighting Child Labour (2010)

The abolition of child labour is not only a moral necessity, abolition of child labour can also yield high social and economic returns, combat poverty in general and advance human development.

This was the core message at a two-day conference, organized by the Ministry of Social Affairs and Employment of the Netherlands in cooperation with the International Labour Organization (ILO). It was attended by more than 450 delegates from 80 countries and witnessed interventions by high-level government officials as well as representatives from employers' and workers' organizations, international organizations and members of the academia and civil society. During this conference the roadmap for fighting child labour up to 2016 was assembled. This inspired Saybolt to enquire about the role we could play in this field.



What can we do?

- Since Saybolt has no substantial suppliers and as a small local company often not in the position to set clauses in contracts, taking chain responsibility is not applicable to us.
- Saybolt can however, be unequivocal in her policies on child labour and we can inform our employees on (the effects of) child labour and hope this awareness will have a spin off in the networks around our presence in local economies and families.



Being a multinational worldwide service provider we seldom come across practices of child labour. It almost speaks for itself that Saybolt does not turn to child labour in any form of work, or in any part of the world. Professionals in this area convinced us however, that there was a part to play on our side.

Awareness programs are a very effective way of fighting child labour, according to the experts in the field. The network of our company obviously expands beyond our office doors and we are active in countries that see child labour within their borders. A presentation was there for developed in cooperation with and advised by Hivos, an NGO focussing on issues like child labour. The outcome in the form of this presentation was to inform and educate higher and middle management, who in their turn can educate their employees by showing them this presentation. It has yet to be rolled out into area- and country management level.

More direct was the advice to include the fight against child labour in our policies. At first it was deemed too obvious to make policy on this, but it was concluded that not working with child labour is not so obvious globally and so it was decided to align not only Saybolt's policies with this strive, but also to align this with the policies of the mother company Core Laboratories. From this exercise the policy in the textbox was composed. From 2010 on of this is part of the Saybolt policy and mentioned in the Administration Letter.

*No person under the age of eighteen (18) may be employed unless associated with a fully accredited work/study program or for temporary summer work during the student's vacation.*

*Part-time, temporary openings may be filled with individuals under eighteen (18) provided they have graduated from a school of secondary education and they meet all local and state age/work requirements. Hire of an individual under these circumstances must have the prior approval of the Division Head and the Human Resources Manager.*

*Any person under the age of eighteen (18) must have a parent or legal guardian co-sign all employment-related forms (including the drug screen consent and the completed employment application form).*

*Persons under the age of eighteen (18) are not allowed to work with dangerous substances (including, but limited to petroleum products).*

### Arbo-catalogus (2008-2010)

In the period 2008-2010 Saybolt initiated and finalised a project to come to a set of 'best practices' in the field of safety in the inspection sector. Soon other inspection companies committed themselves to this initiative and contributed likewise in the initiative called Safety Platform Cargo Surveyors (SPCS), a subcommittee of the International Federation of Inspection Agencies (IFIA). The so called 'Arbo-catalogus', a guide for working conditions and best practices on how to comply with regular safety standards and beyond, was the result of this exercise.

Since safety is a very prominent issue within the Saybolt organisation, in our regular internal communication we report every single issue on this matter. The especially dedicated Safety Officer will keep track of all reported incidents and accidents and touch on a pressing subject in every newsletter. The combined result for Q1-3 for the entire Saybolt organisation can be found on the right.

#### Hours worked

Q1, 2, and 3 2010: 5,164,830

1. Fatalities: 0
2. Lost time injuries: 21
  - a. Lost working days: 541
  - b. Restricted working days: 105
3. Restricted work injuries: 8
  - a. Restricted work days: 188
4. Medical treatment injuries: 7
5. Other (non-recordable) injuries: 19
6. Material damage only: 25
7. LTIR: 0.81
8. TRIR: 1.39

### Elimination of Discrimination (2006/2007)

As inspection and testing is very much a task of humans, Saybolt's human resources are hence one of the biggest assets. Within Saybolt terms and conditions for employment issues like maternity leave and equal employment remuneration and working hours are common. Also, for a company in such a male dominated sector, Saybolt has a striking male-female balance.

The Saybolt compliance officer makes sure that any report of work related discrimination is handled. Formal procedures are developed to canalise these possible reports. The 'help line', available to report, with the least possible obstruction, any form of discrimination, is promoted throughout the company's locations. For example by posters distributed throughout the companies locations. In Saybolt's global newsletters, attention was raised for the subject of the fight against discrimination within Saybolt.

### HIV/Aids and the Workplace (2003-2004)

Saybolt International introduced an awareness programme among all staff members focused on two tracks:

1. Awareness and prevention communication program (Material in various languages was made available)
2. Applying the non-discrimination principle and company support for those infected. A special policy on HIV/AIDS and the workplace was put in place.

There was a special introduction of the president and the higher management. From here the area -as well as- country managers had to sign declarations in which they confirm their implementation activities. During internal audits, the participation was confirmed.



## Environment

- *Global Compact Principle 7*  
*"Businesses should support a precautionary approach to environmental challenges"*
- *Global Compact Principle 8*  
*"Businesses should undertake initiatives to promote greater environmental responsibility."*
- *Global Compact Principle 9*  
*"Businesses should encourage the development and diffusion of environmentally friendly technologies."*

### Environmental Care – Health & Safety (2004/2005)

In this theme, attention was drawn to the day-to-day environmental management and health & safety standards in the Saybolt offices around the world. In addition to the health & safety and environmental policies that are part of the internal audit function, Saybolt launched a review of its existing policies through extensive questionnaires reviews during the Area Managers Meeting in September 2004 and extended into existing environmental policies.

One of the main conclusions was that Saybolt's environmental compliance with domestic legislation and company policies was good to excellent. Possible improvement was in day-to-day environmental care in the offices.

### Safety – tank (2010)

Not obliged by local or national environmental legislation, but driven by safety concerns for her employees, Saybolt Vlaardingen office in The Netherlands decided to abolish the old method of storing obsolete and used chemicals in an underground storage tank. From the beginning of January 2010 Saybolt will use a more labour intense, but deemed safer method of disposing her chemical waste by hiring a specialised company that will manage this disposal in an environmental and generally responsible way.

## Paper Management (2007-2010)

As Saybolt's main product is information, it is obvious that transporting and storing this information is vital to Saybolt. Because of above mentioned reasons Saybolt has a strict Document Retention Policy. However, reducing the use of paper should reduce Saybolt's environmental footprint.

Saybolt set up a paper management system covering the printing and copying; the disposal of waste paper; and the acquisition of paper. New policies included campaigns on double sided printing; reducing margins and awareness on useless printing in general. Paper recycling was in place in a few Saybolt locations, now some of the biggest locations, including Saybolt Netherlands introduced separated paper disposal facilities and closed contracts for dedicated paper disposal.

Finally, within the purpose made handbook on sustainable paper management, Saybolt guided country management towards the acquisition of recycled paper.

Continuing with and focussing on the multi annual Paper Management Project, more communication materials were added in the years 2009-2010 to the internal communication. In most Saybolt Netherlands offices separate paper collection boxes were installed, (paper) waste collection was adapted and printing and copying hardware was set to double sided printing. Outcome of internal update on progress in reducing our 'paper footprint' showed that so far a reduction of 4.75% was achieved in prevention of printing emails. Mostly it was the offices with high rate of email printing that generated reduction. Also paper use in general reduced significantly. Even corrected for fluctuations in revenue, double digit reduction was achieved.

Furthermore, it became Saybolt policy that where possible and efficient, new copiers and printers would be equipped with energy efficient buttons that turn themselves off, when not used for some time.

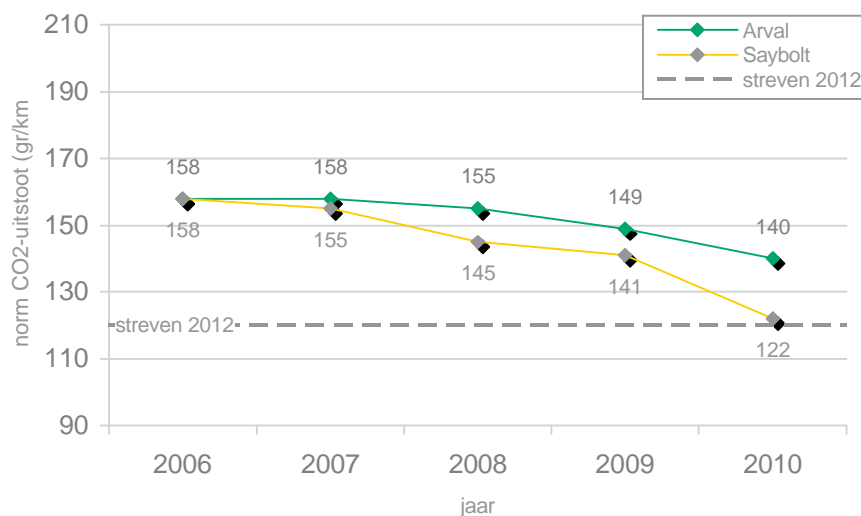
## Clean Car Park (2005/2010)

As a company working in the energy sector, Saybolt felt an obligation to comply with a trend to act energy efficient. Saybolt's policy to have all lease cars for employees at least fall into the top 3 of fuel efficient car segments was re-considered and prolonged. Furthermore, the life span of a car was lengthened by a year, thus avoiding unnecessary waste of cars.

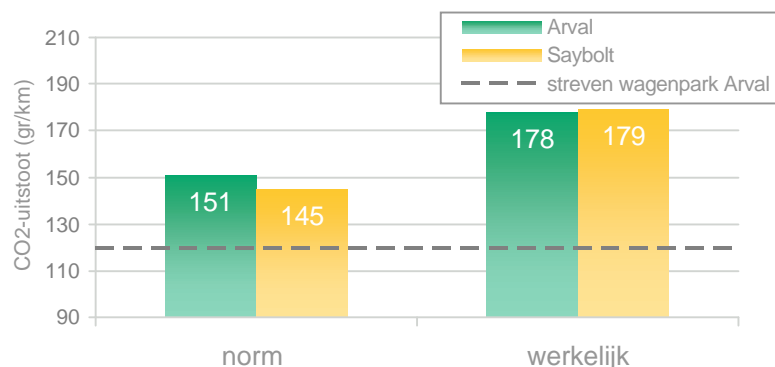
Our lease contracting partner, Arval, keeps track of Co2 emission performance results per vehicle. This enables us to compare our initial projected and actual performance. Saybolt has set a Co2 emitting goal of 122 grams per kilometre for 2012 for our car park. Our company set norm (goal) has been standard lower than the average norm of our lease company car park.

Even so, in reality our average emissions are at present in 2010 comparable to the average of Arval. In fact they are a fraction higher. This could be explained by several typical characteristics of Saybolt service provision. Though our emissions have decreasing significantly during the past 5 years, actual emission compared to our goals remains a point of concern.

Ontwikkeling gemiddelde norm CO2-uitstoot  
nieuwe inzetten per jaar



Gemiddelde CO2-uitstoot per auto



### Clean IT waste (2010)

Saybolt is an information driven organisation, where independent reporting needs to get delivered to the customer in a sound fashion. Information Technology (IT) is there for a very prominent instrument in our service provision.

Using hardware such as mobile phones, laptops, monitors and desk top computers, Saybolt has a certain footprint. In 2010 it was decided that all our obsolete and otherwise not to be used IT hardware will be collected and where possible recycled. If and when this is not possible the hardware will be destroyed in the most environmental-friendly way possible. A specialist company has been hired for this purpose. Saybolt sees the premium paying for these processes as a part of our effort to reduce our footprint.

### Clean Transport Fuels (2002/2010)

As a company working in the fuel quality sector, Saybolt has developed a specialism in the Biofuels sector. What began with quality and quantity control of biofuel storage in the Netherlands and in Spain turned out in market-leadership in the ARA (Amsterdam-Rotterdam-Antwerp) region in the field of biofuel quality control. By testing biofuels for quality we so help facilitating the public acceptance of such transport fuels as alternative for fossil transport fuels.

In 2007-2008 Saybolt performed quality control for a second generation biofuel feedstock plantation in Malawi, Africa. This project was carried out within the TNT-WFP partnership and so we performed our services not for profit. For Saybolt this was also our first experience with Jatropha based FAME.

## Anti-corruption

- *Global Compact Principle 10:  
Businesses should work against corruption in all its forms, including extortion and bribery*

### - Fighting Bribery and Corruption (2005/2006)

While the UN Global Compact was considering adding its tenth principle, Saybolt was already actively engaged in the drafting process of a new ethics and compliance code dealing with preventing and fighting corruption, amongst others. Also, Saybolt was involved in developing a compliance code in the International Federation of Inspection Agencies (IFIA). Late 2003, the IFIA Compliance Code was adopted and beginning 2004 it was fully implemented in the Saybolt global operating procedures.

As part of its global implementation, every staff member has to undergo compliance training. After the training he/she has to take an online compliance exam and sign a declaration that the code and its implications are well understood. Every year, a mandatory compliance refresher course and exam is scheduled.

Finally, a helpline is available. Senior management participates in a Global Compliance Committee that meets every quarter to monitor implementation of compliance issues and resolve questions on ethics that might arise. It is also directly in the interest of Saybolt to continue to give full attention to the fight against bribery and corruption and after this special project fighting bribery and corruption remains a top priority for Saybolt Management.

#### **4. UN Global Compact Netherlands Chapter**

Saybolt continued to be a frequent visitor of most UN Global Compact Netherlands Chapter meetings in 2010 and took active part in meetings and discussions.

On 10 and 11 May 2010, the UN Global Compact Netherlands Chapter was invited to the Hague Global Child Labour Conference. The information gathered at this conference was good material to work with on Saybolt's 2010 special project on fighting child labour. Promotional material and sound information collected here were used in Saybolt's Awareness presentation.

Also, on 30 September, the annual Communication on Progress seminar was held at the ABN-AMRO Headquarters in Amsterdam. During this yearly peer review three UNGC Netherlands chapter members offered their CoP for review by their peers. All participants learned about the various ways of reporting and also Saybolt found inspiration to report about more of Saybolt's activities in the relevant fields.

Finally, Saybolt was a launching member of the Rotterdam Biomass Commodities Network (RBCN) in 2009 and has been a participant up to present. This network aims to create a platform for discussions and deal making in the line of Biomass production and trading. Biomass is thought of as a major contributor to Co2 reduction.

## 5. Measurements of Outcomes

The outcome of the activities and programmes initiated under the UN Global Compact philosophy is measured as follows.

The UN Global Compact Officer is the overall coordinator of all activities. In close co-operation with the senior management he develops the activities and programmes and coordinates implementation and reporting. For many activities, country management (at director's level) directly reports to the UN Global Compact Officer.

An important instrument for measuring the outcome of programmes is the internal audit function. By adding audit requirements regarding some of the UN Global Compact activities to the regular audit scheme, a fixed input of measurements is generated. It is being studied on how measurement on UNGC principles can be measured through this, without contributing to an increasing 'paper burden' on the various offices.

All reports on active programmes are analysed at headquarters level and the results presented to the area- and country managers' meetings that take place twice per year. The area and country managers will communicate the results back to their respective staff and also communicate the bottom-up information that will flow back to the UN Global Compact Officer.

In addition and with regular intervals, measured outcome and activities are reported in the Saybolt International Newsletter. Latest examples have been attached to this report.

Safety is an aspect that is monitored very closely and measurements can be found in the chapters here above.

Saybolt managed to achieve a projected 4.75% reduction in printed emails, while it seems that budget for paper use has declined 36%. An increase in separated disposal of waste paper was also achieved in some of the biggest Saybolt locations.

A final measured outcome of progress is in the field of Co<sub>2</sub> emissions of the Saybolt car park. A reduction of more than 22% (158-122 grams/kilometre) in Co<sub>2</sub> emission of Saybolt cars is projected in 2012. At the same time actual emissions are still in line with average car parks (179 grams/kilometre). More and more efficient cars are becoming part of our car park.

The ASTM standards on the GSL have been split into two sections and the C, D and N coding dropped. One section is from astm.org and provides the current status of all standards of interest by Saybolt laboratories worldwide. The other section provides the full list of current standards on CoreNet (minus C, F and G standards).

### Lab Capabilities Database

The Lab Capabilities database currently on the Laboratory information site will be deleted since it is not user or editor friendly and has not been updated in a few years. Instead of a database, lab capabilities will be presented in an Excel spreadsheet similar to the one used currently for Western Hemisphere labs (see <https://clb.corelab.com/Departments/QA/Files/Forms/labman/man5procs/pdf/App1.r10.pdf>). It can be sorted by test method and test name as the user desires. Once the spreadsheet has been updated for Eastern Hemisphere laboratories, it will be uploaded to the Saybolt Wiki site at a location yet to be determined. More details will be provided at a later date.

### Saybolt Worldwide Crosscheck Program

The 2008 4<sup>th</sup> quarter study was cancelled due to time restraints and the proposed 2009 schedule

below has been sent out to all labs globally for comments:

- 1<sup>st</sup> quarter: Biodiesel, VGO, Methanol
- 3<sup>rd</sup> quarter: Jet Fuel, Toluene

Depending on shipping costs, we may be able to add to third quarter the cancelled fuel oil study from 2008 and stay within our budget.

### Test Method Comments Database

Last year a test method assessment database was to be added to CoreNet. Instead, the test method comments (TMC) database will be used for this purpose since it does not involve IT. Observations from test method assessments conducted during audits will be added to the database to serve as reminders to others running those tests. The TMC database will be moved over to Wiki later in the year.

### Be a Yardstick for Quality!



## SECOND GENERATION BIOFUELS

### KNOCK ON WOOD

By: **Marnix Koets**  
**Business**  
**& Special Projects**  
**Saybolt International**



If you look at it from a sustainability point of view, second generation biofuels are biofuels that do not compete with the food market.

Second generation biofuels are by this definition biofuels derived from non-edible feedstock. Jatropha is an example of this.

After the so-called first generation biofuels like corn based ethanol and rapeseed based FAME for Biodiesel, most attention is now focused on the second generation biofuels.

More and more people are looking at this from a technological point of view, however. In this frame second generation biofuels are biofuels that require Biomass-To-Liquids (BTL) or Fischer-Tropsch process to be produced.

There is some confusion on what definition is used for these second generation biofuels.

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Because second generation biofuels are expected to be more sustainable than first generation biofuels, many national, regional and transnational governments announced substantial legislative measures. (...even though experts doubt whether the ambitious EU goals for Biofuels can even be met)

At present, special legislation for second generation biofuels is limited to a few countries and is only very recent. It is yet unclear what the effects on the market will be.

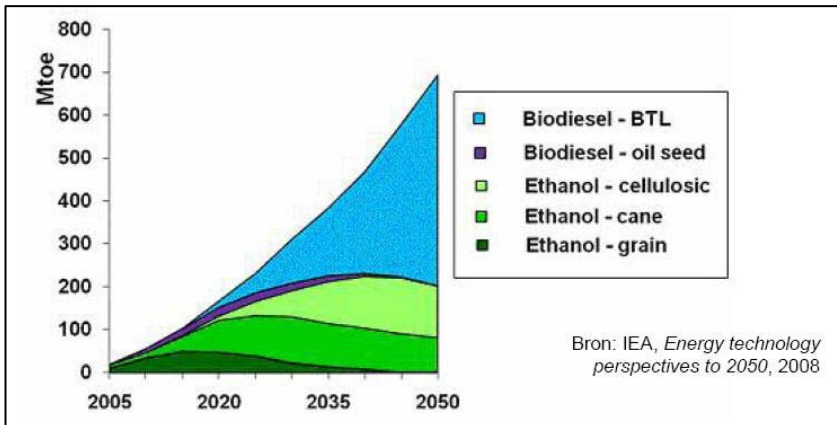
For the future, Europe and its member states are going to put emphasize on the sustainability of biofuels. That in itself should strengthen the position of second generation biofuels.

Apart from this, Europe is working on a double-count, meaning that these fuels will count double when counting for the 10% blend of renewable energy goals for 2020. Also the European parliament proposed a mandatory share of renewable electricity, hydrogen, waste, residue, lignocelluloses, algae and bio's from degraded land should range from 1 to 4% of the total blend.

World production fuel-ethanol (in Ml/yr)	
1990	15.212
1995	18.074
2000	17.107
2005	31.327
2008	65.553
2011	100.000
2020	200.000

Abengoa themselves initiated a few pilots like this in New England and Kansas in the U.S. and Salamanca, Spain. It will be only after 2020 that stand alone lignocellulosic production will become viable even though it might grow very fast from there. Main argument for the disappointing share of the 2<sup>nd</sup> generation biofuels is the lack of economies of scale.

Given the large interest from various partners in deriving energy from biomass, 2020 does not need to remain a static date.



In a recent biomass meeting in the Rotterdam Port area many very interesting developments came to the surface. Already parties are interested in the shipment of biomass like switch grass and wood pallets to be used as direct biofuel. (At present, in Vlissingen in the Netherlands, Saybolt regularly performs inspections on wood chip shipments to Scandinavia)

However, not much volume from lignocelluloses biomass is expected to enter the market in the following years as only 1 to 5 mln liter ethanol/yr comes from operational plants and none from operational biodiesel from lignocelluloses biomass.

There are about 60 larger pilot- and demonstration installations for second generation biofuels, most of them are situated in the US, but Europe is following.

Abengoa Bioenergy, the largest producer of bio-ethanol in Europe, foresees at first opportunities for Hybrid concepts, combining first with second generation biofuel production at the same location.

Also, a group of investors is looking at small refining

capacity to directly turn biomass into liquids so that the big transport streams of biomass, consisting of a lot of water and air, is prevented.

On the production side, the UNECE in Geneva is involved in large scale wood pallets production in North-West Russia, but also in the large area in the Black Sea region.

Yes, given the various policy incentives there is a great demand for this kind of biofuels. However, technical progress is still needed before any large scale commercial production can take place, which will not take place before 2020...but how far away is 2020? ←

# Electrocution? Outlook on Electric Vehicles

By: Marnix Koets  
Business  
& Special Projects  
Saybolt International



The International Energy Agency (IEA) calculated that an electrical car emits about as much CO<sub>2</sub> indirectly as a hybrid car like a Prius does today and performs only 15% better than an average new diesel vehicle.

Also the production processes of the batteries of the electric vehicles and hybrids may not be very CO<sub>2</sub> neutral or even CO<sub>2</sub> poor.

In various parts of the world the public debate on how to battle climate change has reached the topic of transportation fuels. Some years ago the Biofuels seemed a good enough solution for the problems ahead. Since some time now the whole combustion engine has been the subject of critical thoughts.

Electrical cars do not emit CO<sub>2</sub> or other greenhouse gasses, so they are the answer to a large part of the problem of greenhouse gasses.

Are they? And whether or not they are, what does this mean for Saybolt as an inspection and analysis company in many transportation fuels?



<Electric Vehicles (EVs) use an electric motor for propulsion with batteries for electricity storage. The energy in the batteries provides all motive and auxiliary power. The batteries are recharged from grid electricity and brake energy recuperation, but potentially also from non-grid sources, such as photovoltaic panels at recharging centres.

Hybrid electric vehicles (HEVs) use both an engine and motor, with sufficient battery capacity (typically 1 kWh to 2 kWh) to both store electricity generated by the engine or by brake energy recuperation. The batteries power the motor when needed, to provide auxiliary motive power to the engine or even allow the engine to be turned off, such as at low speeds.

PHEVs can drive the full mile on electrical power and obtain this from the grid. Significantly more energy storage allows the vehicle to do so. The new PHEVs combine the vehicle efficiency advantages of hybridisation with the opportunity to travel part-time on electricity provided by the grid, rather than just through the vehicle's internal recharging system.>

Many critics of electrical cars and environmental activists as well stipulate that electrical driving only shifts the problem of CO<sub>2</sub> emissions. The car itself may no longer emit, but the electricity that will drive the car will also have to be produced in a low-carbon way. Given the power generation supply being developed at present, chances are very big this will come from coal. Without large Carbon Capture and Storage (CCS) projects, this will mean a large increase in CO<sub>2</sub> emissions worldwide, but largely in China and other emerging economies.

Being that as it may, some countries (mainly China, Spain, the U.S. and U.K.) have announced national targets for Plug-In Hybrid Electric Vehicles (PHEV) and Electric Vehicles (EV) totaling up to more than 4 million vehicles in 2020 and the European Commission will soon present an action plan on "clean and energy efficient cars". The IEA even expects a total production of more than 7 Million PHEV's and EV's in 2020. ⇨

Introduction costs however will be very high, unless some hurdles can be overcome. The range of the car should be increased to around 200 km; the life span of the battery should be at least 10 to 15 years, otherwise cars will have no real user's value; but most important is bringing down the cost of the battery.



A battery should cost less than 300 US\$ per Kilowatt Hour (kWh) in order to present any viable business case for such a car. For example, if drivers demand 500 km of range (about the minimum for today's vehicles), even with very efficient vehicles and battery systems that are capable of repeated deep discharges, the battery capacity will need to be at least 75 kWh. At expected near-term, high-volume battery prices of approximately USD 500/kWh, the battery alone would cost USD 35 000 to USD 40 000 per vehicle.

For this reason, BP's Public Affairs office recently said that they expect that only PHEV's can have a future, as there are no signs costs of batteries can decrease without revolutionary techniques.

They ask why tax payers money must be spent (not incorporating even a tax on electricity as transportation fuel) on cars while this car is not even contributing to reducing co2 levels drastically.

The security of supply of fossil fuels can also be diminished if taxes on fuels can be decreased.

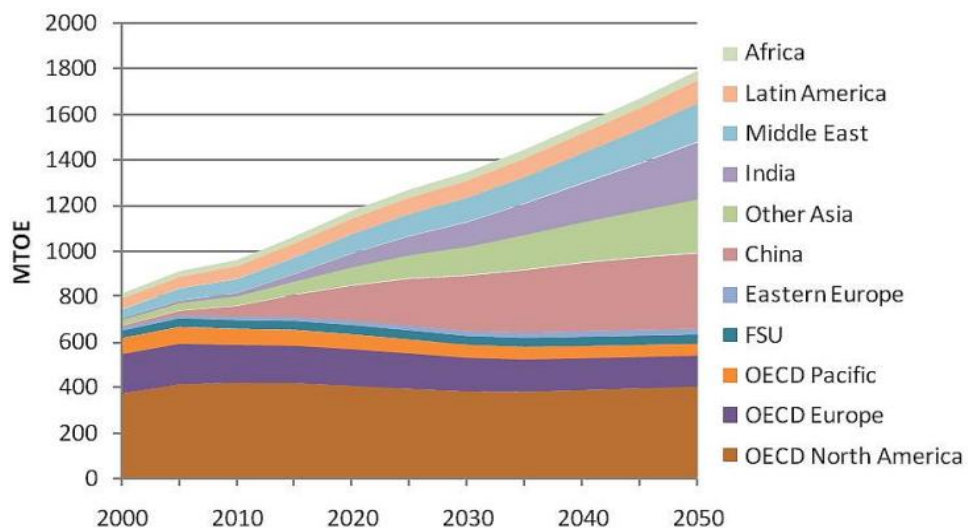
There is still plenty of oil, it is only getting more and more expensive to produce, the VP public affairs of BP recons.

The problem and investment challenge of public charging infrastructure is not even touched upon.

Car manufacturers seem very enthusiastic and at the recent Geneva Auto Salon many announced future models. Renault-Nissan is the most ambitious with 3 announced electric car models. If car sales will touch on the 10,000's or even 100,000 remains to be seen and this in the end will be the most important test; Will people actually start driving these cars?

All projections on market shares in the coming years and decades are very speculative at this stage, although in the coming years this any decreasing effect on transport fuel sales is not expected.

Of all electric cars in 2020, PRTM expects 80% to still be normal hybrids as we know them today. At most 5% of all cars will be fully electric in 2020, even if world leaders adopt the IEA's ambitious 'Electric and Plug-in Hybrid Vehicle Roadmap'. As the Hybrids (HEVs) and PHEVs will still need fuel for their combustion engines and, at most we will be able to cover part of the demand growth with electric capacity.



**Projected Fuel Use by region for Light Duty Vehicles**

Electrification will surely be part of the solution in our search for renewables, but for the short and medium term its role will be limited.

On Saybolt's Sharepoint (Documentation > Renewables > Electric Cars) you can find more articles and presentations on electrical vehicles.





# UN GLOBAL COMPACT

## A SPECIAL REPORT ON REPORTING ...

**By: Marnix Koets**  
**Business**  
**& Special Projects**  
**Saybolt International**



Saybolt has been a UN Global Compact member since 2002 and was a launching member of the Netherlands Chapter of the UN Global Compact in May 2007.

Today more than 6000 companies have signed up to align their operations and strategies with the 10 universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

Members all over the globe have committed themselves to yearly engage in a project, dedicated to one of these principles. In the past, Saybolt has initiated projects in the field of HIV/AIDS issues, General environmental policies, Gender issues and waste management. The paper management project being in line with waste management.

Because the UN Global Compact is very much a result driven initiative, Saybolt and other members are obliged to promote such universal values by producing a yearly Communication On Progress (COP). These COP's should be communicated to our stakeholders and contain measurable outcomes of dedicated programs on one of the 10 principles.

Communicating this progress is part of what is called 'reporting' and this is usually done by consumer-market driven companies. The motives are manifold. Communicating to the market on corporate social and environmental responsibility is a prominent one, but more and more companies are 'reporting' because this proved to enhance their position in the labour market. Young professionals wish to work for a company that takes its responsibility. Also some banks recently indicated that the reporting had a strong 'internal communication' element to it. Many people working with banks wanted to know that banks were not just 'the bad guys in

the credit crunch era', but also took responsibility in social and environmental issues. Other surveys disclosed that employees value responsible behavior as the 3<sup>rd</sup> important factor of their company.

Soon there might be another reason to report: Legal compliance. In Denmark a regulation came into force whereby companies of a certain volume are forced to include a sustainability chapter to their financial reporting, and in Sweden, companies with a state director on the board are obliged to do so as well. In other parts of the world there seems to be an interest in this. Even the Securities Exchange Commission in the United States showed interest. Now, I do not suspect this to become law in the very near future, but Saybolt's membership of the UN Global Compact is already a good preparation.

It would also not have a large impact on very large companies, as 79% of the top 250 companies worldwide already report on how they take environmental and/or social responsibility.

Soon Saybolt will report on our paper (waste) management to the UN Global Compact Headquarters in New York and prolong our dedication to taking our responsibility as a company. We will now also make sure our stakeholders can update themselves with the Communication on progress 2009 via a link on our website.

I invite you to do the same and stay informed on Saybolt's efforts to work in the areas of human rights, labour, environment and anti-corruption.



# Patrick Moore

## On Energy, Science and Well Being

By: Marnix Koets  
Business  
& Special Projects  
Saybolt International



Back in the 1970's, the young life scientist Patrick Moore found himself faced with the outlook of a world in an arms race where the H-bombs was a serious option and testing this weapon posed serious threats to the environment.

Together with others this young Canadian formed Greenpeace and they were successful in limiting on land nuclear testing and unlimited brutal seal and whale hunting. Getting up and doing something proved to be a successful concept.



Here Patrick Moore under the 'P'

Greenpeace had many victories in that time, but Patrick Moore left Greenpeace when he was outvoted and the organisation started campaigning against Chloride. Being the only scientist on Greenpeace he tried to convince the others that Chloride being a natural element, it is not really their jurisdiction to ban it. Chloride can actually be a very useful element and in adding it to water actually contributed greatly to human health in general, he added.

After a long period of every day being against all sorts of things, he now decided to think about what he was in favour of, Dr. Patrick Moore explains on a June day in The Hague, the Netherlands.

Dr. Moore is in favour of more high yield grains as they have the ability to combat famines and save lives. He can't believe that Greenpeace actually favours bio-agriculture, as this 'technique' takes up much more land and thus costs forests.

Why not embrace GMO (Genetically Modified Organisms) crops such as 'Golden Rice'? Before Golden Rice, Being rice with Wheat components, there was a threatening vitamin A deficiency in Rice eating countries. Countries that embraced this rice now have healthier population. Greenpeace helped to ban this food for 12 years, because they were afraid of 'unforeseen problems'.

There is a fear of 'alien' species. Plants and animals that did not exist in certain habitats before, in itself would cause the next Armageddon. One tends to forget that the U.S. State of California's biodiversity almost entirely exists of foreign species. Including the Chardonnay grape, which many people daily enjoy in one sort or the other. Moore's message again is: Do not oppose anything before you have studied it thoroughly.

Only after Europe got rid of Malaria efforts were made to globally ban DDT, the pesticide that kills mosquitos, but also much of the other insect population. Even though DDT is not very dangerous to man (we sprayed it over WWII soldiers to combat lice, without any harm done to the soldiers) there was a total ban on DDT, contributing to a regional uplift in Malaria again, up to today.

Every year now, still 1,000,000 people die because of malaria, in the poorest areas of the world. Why not develop a responsible and proportionate way of using DDT? In Moore's view the current multimillion dollar environmental activist industry doesn't care less about human lives, is totally unscientific and therefore often wrong and is actually counterproductive.

The fact that he began his activist life opposing the H-bombs also made him combat nuclear power plants a few years later.

⇒





**Patrick Moore in The Hague, June 2010**

When asked, Moore answered that this is the one thing he regrets from his early activist life.

Nuclear weapons are a terrible thing, he explains, but how many lives have been saved with nuclear medicine? How much clean energy can we get from nuclear energy?

Touching the topic of energy Moore openly wonders why the environmental movement is so opposed to building the gigantic dams in China. The mere formation of lakes cannot be that bad can it? If we oppose certain moving policies we should address the governments, but that doesn't make hydropower a bad thing.

Western governments, under pressure from the environmental movement, made the World bank pull out of financing. Luckily the Chinese did not quite have a cash flow problem and so paid for the dam themselves. This saved building 40(!) coal fired power plants. Many Chinese will breathe better because of this.

He stipulates that the wind-energy hype will force energy companies to counter balance the uncertain power production from wind farms with gas fired power plants. Dr Patrick Moore is not against wind energy, but it should only be used where it is cost effective and useful.

Also some forms of solar energy are a waste of money that could be used to invest in research based on scientifically optimal prognoses.

In the end the most effective and efficient power sources are nuclear power and solar energy through biomass.

The problem of uranium shortages can be solved with new recycling technology making uranium 400 times more efficient.

However, with evolving bio technology and more efficient forestry we have an almost endless source of energy in biomass. We are now developing ways to let trees and plants absorb even more CO<sub>2</sub> and derive more energy from the solar power coming to our earth every day.

In Biomass the ecologist PhD sees the future as the next big energy source. Soon the present first generation BioFuels like maize and soy will be replaced by cellulosic materials and actual wood chips.



Moral of his story was that no things are bad in itself. One must base our findings of all productive elements on proper scientific knowledge and then use it for the well being of humanity.

Poverty, starvation, underdevelopment, and ignorance are not examples of such good things.

For a better presentation of all this you can Google: "YouTube, Patrick Moore, TEDx in Vancouver 11/21/09" or follow this link: [http://www.youtube.com/watch?v=kHZKo13HV2A&feature=PlayList&p=ECC990F9E8593BEE&playnext\\_from=PL&playnext=1&index=1](http://www.youtube.com/watch?v=kHZKo13HV2A&feature=PlayList&p=ECC990F9E8593BEE&playnext_from=PL&playnext=1&index=1)

**Or go to the website:**

<http://www.greenspirit.com/>



# Child Labour

## How Saybolt can help combat it ...

By: Marnix Koets  
Business  
& Special Projects  
Saybolt International



According to the UN International Labour organisation (ILO), worldwide there are still 217.000.000 girls and boys who are working. 126 million of them are even being exploited: They work in dangerous places like quarries and mines and do heavy work like carrying heavy goods and work in blazing heat.

They cannot go to school.

Children's rights are human rights and children have the right to be free from child labour and have the right to education.

Eliminating Child Labour is therefore incorporated in the 1989 UN convention of the Rights of the Child, which was signed by almost every country in the world (except Somalia and the United States and amongst others Saudi Arabia to have made exceptions to it).

Eliminating Child Labour is also incorporated as the 5<sup>th</sup> principle of the UN Global Compact, the initiative of which Saybolt is an active member.

Even before the industrial revolution child labour was present around the world, when children as young as four years old helped in work shops and on the land. They formed a prominent part of the family work force.



However, with the industrial revolution things did get worse for children in Europe. Working hours increased and the work got tougher, forcing children to work heavy machinery.

Then romanticism provided a whole different view of the child, that should now be 'protected, dependant and happy'. Child labour laws emerged, but it was only the combination with higher wages, technology, and compulsory schooling that generated the effect.

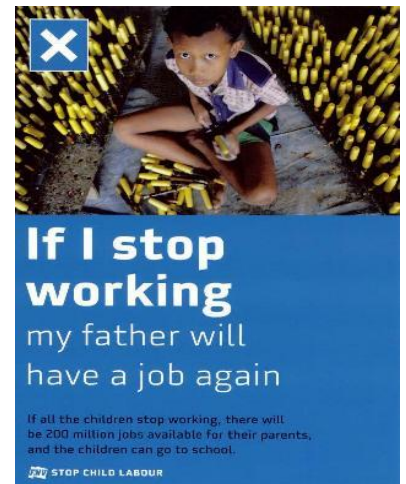
This raises the suspicion that also in our time local legislation is not a sufficient condition for fighting child labour, but a necessary condition.

Also in our days the reasons for letting children work in developing and emerging countries are probably not very different from reasons in European homes back then: families are poor because the parents earn only very little or have no work at all. To help provide for enough income, children are needed to help raise income. Children will work in factories making jeans or other clothing and labour in brickworks.

Trade unions have always urged to stipulate that fighting child labour is good for fighting poverty because in the child's place, an adult can do the same work. Moreover, with children getting education, the prospects for families looks much better for the future. Not

unreasonably labour organisations and trade unions have a campaign stating that "If I stop working, my father will have a job again".

Now many developing and



emerging economies seem to be in the position Europe was in before. It seems logical to look at the same factors that made it possible to abolish child labour in the previous centuries: Child labour laws, higher wages, technology, and compulsory schooling.

The abolition of child labour is not only a moral necessity, it can also yield high social and economic returns, combat poverty in general and advance human development.



Although Saybolt is not involved in any part of child labour, we do operate in areas of the world and economic sectors within, where there are risks of child labour occurring. Furthermore Saybolt employees across the globe could be confronted with child labour in their personal situation.

All of these are good enough reasons to raise awareness amongst Saybolt employees on what child labour is, why it is destructive for local



economies and what, if even little, can be done about is. Everybody should be aware of the risks of child labour and of the destructive effects it has on societies and its economies.

On Saybolt Sharepoint a presentation is available and everyone is invited to have him or her self informed on this topic (go to: <https://sps.corelab.com/sites/saybolt/Documentation/Corporate%20Social%20Responsibility/UN%20Global%20Compact/presentations/Saybolt%20Child%20Labour%20combat.ppt>).

Since this awareness program also incorporates practical tips how to avoid child labour occurring in our own organisation, *it will be a mandatory part of a country manager update program.* Furthermore Saybolt management decided to codify a policy on hiring minors within the Saybolt organisation. In the Saybolt policy it will state that:

Furthermore Saybolt management expressed wishes to codify a policy on hiring minors within the Saybolt organisation. In close cooperation with Mrs DeAnna Nwankwo existing Corelab policy on hiring minors could be amended to conform with the latest advice given to the private sector on how to act when wanting to combat child labour.

In this Corelab policy it will state that we are not to employ people under their age of 18 years old (though exceptions can be made for school going minors doing temporary (vacation) work.) and that people under the age of 18 are not allowed to work with dangerous substances like petroleum or petroleum products (provided local legislations allows this).

Let's hope more and more children will be allowed to go to school instead of work.



## Meeting Calendar

### September 21 through 24, 2010

- Area Managers Meeting in Istanbul, Turkey

### September 28, 2010

- Country Managers Meeting Africa & Europe & Baltic / Scandinavia & Middle East in Rotterdam, The Netherlands

### October 6, 2010

- Country Managers Meeting Far East & China in Beijing, China

### October, 20, 2010

- Country Managers Meeting BSEM & Russia in Istanbul, Turkey

### October 26, 2010

- Country Managers Meeting South America in Chile

### November 9, 2010

- Location Managers Meeting North America in Houston, TX, U.S.A.

The next International Saybolt Newsletter will be published in November 2010

Please feel free to send your story to: [saybolt.newsletter@corelab.com](mailto:saybolt.newsletter@corelab.com)  
Deadline of contribution is: October 20th.



**Fast, to the point.** Time is money.



# Biomass Standards

## A Woody Thing

By: Marnix Koets  
Business  
& Special Projects  
Saybolt International



The secrets of Biomass standardisation were revealed recently in the Rotterdam Port area. At least that was the intention of the "*International Congress: Biomass & the role of standards: Standardised biomass, a mature market?*" In the morning presentations were given on the status and in the afternoon two field trips, to the Maasvlakte Eon power station and Biomass storage at the European Bulk Services (EBS) terminal in the Laurens haven. As trade is supported by trust and the minimizing of risk, it is thought that standards support the trade of biomass.

Martin Kaltschmitt of the German Biomass research Center in Leipzig explained why having EU standards was a necessary condition for the market of solid biofuels to develop. The fact that Martin himself was an active member of a working group (TC 335) of CEN gave him more than enough opportunity to share the background and other developments of biomass standardisation projects... at length.

The CEN project is roughly divided into five working groups:

- 1) Terminology, Definition and Description;
- 2) Fuel specification and Classes and Quality assurance;
- 3) Sampling and Sample reduction;
- 4) Physical and Mechanical Test Methods; and
- 5) Chemical test Methods.

The third working group has been working on various agricultural residues as well as general common wood bark, -chips and -pellets. They are consulting with stakeholders on solid standards and procedures for biomass sampling (although some market parties did not want to await the final results. The European Pellet Council has already issued standards for pellets).

Biomass' combustion features, as focus for the fifth Working Group, are determined by physical and chemical properties. The first, for instance, consisting of impurities and bridging properties. Many testing methods have been tested and are still proceeding.

The second, chemical properties, was addresses by verifying existing test methods by testing their practicability and accuracy. Amongst these were tests dealing with chlorine, sodium and potassium.

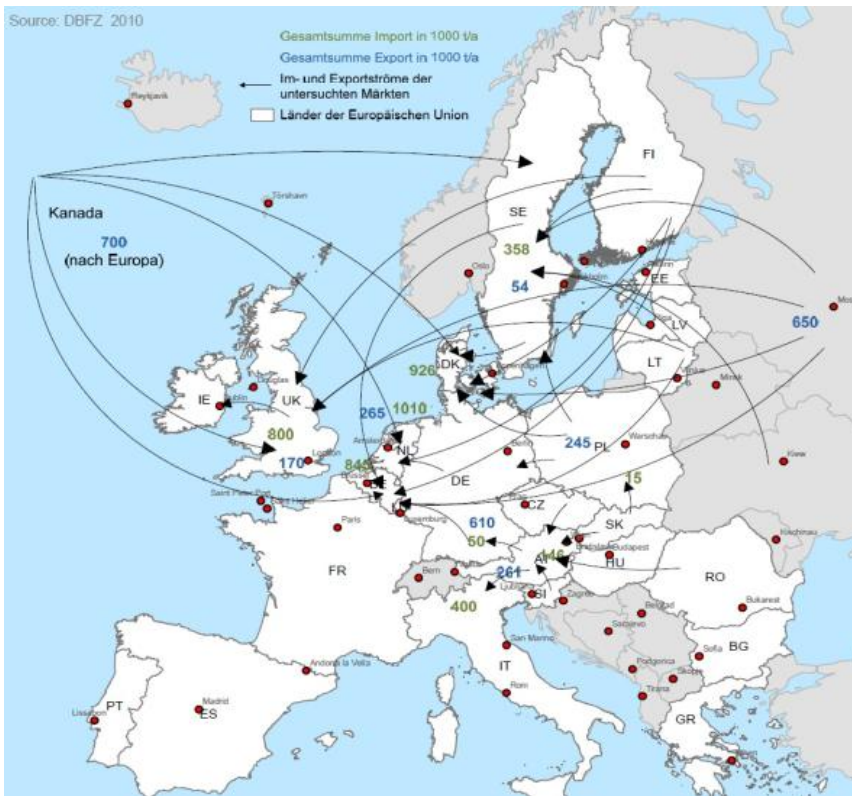
Efforts in the field of quality measures focused so far on end user requirements of biomass and Critical Control Points and quality influencing factors throughout the whole supply chain. A "CCP table" and a summary on logistical matters (storage, transport, etc) were produced.

There is as yet not much market to enhance though. As Jonas Wilde of Vattenfall put it; "*The tradable biomass comes in the forms of Molasse, Wood Chips, White pellets, Torrefacted Pellets, and Carbonised pellets. But ladies and gentlemen, contrary to what you might like to think; none of them is now a commodity.*"

This is true. In 2009 11-12 million pellets have been produced worldwide. That is not much if your ambition is to be a commodity. Furthermore, exportation comes almost exclusively from the U.S.A, Canada and Russia. Also the fieldtrip to the EBS terminal in Rotterdam's Laurens haven (see picture below) left little space but to conclude that there was no activity in the field of biomass trade, opting for storage space. But they are certainly ready for such trade and also expect increase in the coming years.



Though the biggest flow of wood pellets is still from Canada to Europe, the intra-European trade is also picking up. (Data Maps can be found on the Biomass page of Saybolt WIKI).



Still, biomass is a difficult energy source: It has a low energy density, it's hydrophilic, heterogeneous, tenacious and fibrous (hard to grind) and last but not least, vulnerable to bio degradation.

Torrification could, according to many at the conference solve this problem because it densifies the biomass-energy. Torrification is a process of thermally treating biomass. The energy cost of this process (around 10% energy loss) is well compensated by the vanished energy used for grinding the material before co-firing. (More on Torrification can be found on Saybolt WIKI).

In what form the biomass will be supplied when it will become a commodity remains to be seen, but as a whole Biomass is the only renewable and relatively sustainable energy source (besides the biofuels ethanol and biodiesel) that could benefit from existing and future Saybolt expertise.

Having said that; there is little doubt that Europe will need to import biomass in the future. Europe does not have enough biomass of their own and will for surely need to co-fire in order to meet emission targets. We should also not forget that in other parts of Europe many people use biomass as bio-energy for heating in small scale burning units at home. Not in the least; Germany.

Also the European Panel Federation, the wood panel makers of Europe, has recently expressed their concern to the 'subsidies for biomass fuel'. "You can recycle wood many times, but you can only burn it once", they eloquently say. The Federation expects a wood feedstock shortage of around 400 million m<sup>3</sup> in Europe by 2020. Already they claim the price for wood has risen 50% in 2010 in Belgium alone.



Nuclear, wind, tidal wave and solar are sources that do not need quality inspection because they channel the energy in the form of electricity and not liquids or solids to be combusted.

As one speaker also concluded, any biomass sampling and testing norm or standard will have to be close to common coal standards, as they are comparable. For that same reason Saybolt Van Duyn in Germany is the ideal location for sample preparation and testing of biomass within the Saybolt organization. Saybolt Van Duyn has a long history of coal testing due to the (almost closed) German coal mining in the area.

